

# Work Order ID 69983

Wednesday, May 25, 2011 9:08:53 AM



Page 1

Item ID: D206-667-247TRN

Accept



Setup Start



Revision ID:

Item Name: Crosstube Assembly, Mid Aft

Stop



Start Date: 5/25/2011 Start Qty: 1.00



Cust Item ID:

Required Date: 6/30/2011 Req'd Qty: 1.00



Customer:

Reference:

Approvals:

Process Plan:

*[Signature]*

Date:

11-05-25

Tooling:

Date:

QC:

Date:

SPC (Y/N):

Date:

Run Start



Stop



Sequence ID/  
Work Center ID

Operation  
Description

Set Up/  
Run Hours

Tool ID

Tool #

Plan  
Code

Accept  
Qty

Reject  
Qty

Reject  
Number

Insp.  
Stamp

Draw Nbr

Revision Nbr

D206-667-247

A

100

0.00



MORI SEIKI CNC LATHE LARGE

Mori Seiki

Memo

0.00

Mori Seiki CNC Lathe Large

1-Fill tube with sand & install plugs DTxxxx on both ends as per Folio FB030  
2-Turn first side as per Folio FB030  
3-File down transition lines smooth.

*[Signature]*

11/06/22

110

0.00



QC1- Inspect dimensions to dimension sheet

QC

Memo

0.00

Quality Control

*[Signature]* 11/06/23

?

120

0.00



MORI SEIKI CNC LATHE LARGE

Mori Seiki

Memo

0.00

Mori Seiki CNC Lathe Large

1-Turn second side as per Folio FB030  
2-File down transition lines smooth.  
3-Remove sand and plugs

*[Signature]* 11/06/22

1

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

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Page 2

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Required Date: 6/30/2011 Req'd Qty: 1.00

Customer:

Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_

Run Start

QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Stop

Sequence ID/  
Work Center IDOperation  
DescriptionSet Up/  
Run Hours

Tool ID

Tool #

Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

130

QC1- Inspect dimensions to dimension sheet

0.00



QC

Memo

0.00

Quality Control

140

QC8- Inspect parts - second check

0.00



QC

Memo

0.00

Quality Control

150

Crosstubes Chemical Conversion

0.00



HandFXtube

Memo

0.00

Hand Finishing Crosstubes

W/O:		WORK ORDER CHANGES					
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Page 3

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Revision ID:

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Item Name: Crosstube Assembly, Mid Aft

Start Date: 5/25/2011 Start Qty: 1.00



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Required Date: 6/30/2011 Req'd Qty: 1.00



Customer:

Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_

QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Run Start



Stop



Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
160  QC Quality Control	QC3- Inspect Part Finish  Memo	0.00  0.00		C		1	0	BE 11/06/23	
170  Packaging Packaging Packaging	Packaging  Memo Identify and stock in kanban rack Location: <u>LANDING</u> GEAR	0.00  0.00		SAD 11-06-23					
180  QC Quality Control	QC21- Final Inspection - Work Order Release  Memo	0.00  0.00						11/06/23	ME 11-06-24

W/O:		WORK ORDER CHANGES					
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**NOTE:** Date & initial all entries

# Picklist Print

Wednesday, May 25, 2011 9:09:00 AM

Page 1

Work Order ID: 69983

Parent Item: D206-667-247TRN

Parent Item Name: Crosstube Assembly, Mid Aft




Start Date: 5/25/2011

Required Date: 6/30/2011

Start Qty: 1.00

Required Qty: 1.00

Comments: IPP rev:A 11.01.06 new issue DD verf:EC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D6004-115  Crosstube Material		Manufactured	No			100	Each	34.0000	1	1			

Location

Loc Qty

Loc Code

LG

34

34685

5

38336

29

\_\_\_\_\_ *man; 11/06/21*

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

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Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

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**NOTE:** Date & initial all entries



<b>DART AEROSPACE LTD</b>		<b>Work Order:</b> <u>18983</u>
<b>Description:</b> Crosstube Assembly		<b>Part Number:</b> <u>D206-667-247</u>
<b>Inspection Dwg:</b>	<b>Rev:</b> <u>A</u>	<b>Page 1 of 1</b>

### FIRST ARTICLE INSPECTION CHECKLIST

Inspection Sheet Drawing Dimension		Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
<b>SIDE A</b>	2.079	$\pm 0.005$	2.081	✓		Mic	CNC-01
	2.490	$\pm 0.005$	2.493	✓		"	
	2.025	$\pm 0.005$	2.020	✓		"	
	2.145	$\pm 0.005$	2.150	✓		"	
	2.209	$\pm 0.005$	2.211	✓		"	
	2.287	$\pm 0.005$	2.289	✓		"	
	2.363	$\pm 0.005$	2.364	✓		"	
	<del>2.363</del>	<del><math>\pm 0.005</math></del>					
	0.200	$\pm 0.010$	.200	✓		vern	JF-01
	4.438	$\pm 0.030$	4.465	✓		"	
	R 0.063	$\pm 0.010$	0.063	✓		R6	
	R 2.00	$\pm 0.010$	2.00	✓		"	
	R 0.063	$\pm 0.010$	.063	✓		"	
<b>SIDE B</b>	2.490	$\pm 0.005$	2.494	✓		Mic	CNC-04
	2.025	$\pm 0.005$	2.030	✓		"	
	2.079	$\pm 0.005$	2.084	✓		"	
	2.145	$\pm 0.005$	2.150	✓		"	
	2.209	$\pm 0.005$	2.211	✓		"	
	2.287	$\pm 0.005$	2.291	✓		"	
	2.363	$\pm 0.005$	2.365	✓		"	
	0.200	$\pm 0.010$	.200	✓		vern	JF-01
	4.438	$\pm 0.030$	4.468	✓		"	
	R 0.063	$\pm 0.010$	0.063	✓		R6	
	R 2.00	$\pm 0.010$	2.00	✓		"	
	R 0.063	$\pm 0.010$	0.063	✓		"	
99.16	$\pm 0.020$	99.76	✓		tape	mm.l	

<b>Measured by:</b> <u>MM/122</u>	<b>Audited by:</b> <u>SA</u>	<b>Preliminary Approval:</b>
<b>Date:</b> <u>11/06/22</u>	<b>Date:</b> <u>11/16/23</u>	<b>Date:</b>

Rev	Date	Change	Revised by	Approved
B	10.04.14	Added preliminary approval	KJ	

*10.04.15*

W/O:		WORK ORDER CHANGES					
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**NOTE:** Date & initial all entries

Item	Qty -247	Part Number	Description
1	X	D206-667-247	CROSSTUBE ASSEMBLY (206L MID AFT)
2	1	D6004-115	CROSSTUBE
3	2	D2873-043	NUT PLATE
4	2	D2873-045	NUT PLATE
5	2	D2892-1	SUPPORT
6	4	D3595-063-450	RUBBER CUSHION
7	4	MS21920-22	CLAMP
8	14	MS20601AD4W10	RIVET (OR NAS9302B-4-10)
9	A/R	MAGNOBOND 6398	ROCKWELL SPECIFICATION RBO-120-023 ADHESIVE (TEXTRON/BELL SPEC. 299- 947-100, TYPE II, CLASS 2 ADHESIVE)

#### GENERAL NOTES:

- 1) MATERIAL: MANUFACTURED FROM D6004-115  
FINISHED LENGTH = 99.76±0.020
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1  
PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2  
PAINT OUTSIDE PER DART QSI 005 4.2
- 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED.
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX.
- 6) IDENTIFICATION: SCRIBE DART PART NUMBER "D206-667-247" AND BATCH NUMBER ON  
INSIDE OF CLIFF PER DART QSI 044 6.4 (VIBRATING STYLUS).
- 7) WEIGHT: 21.1 lbs (-607 = 17.7 lbs)
- 8) PART IS SYMMETRIC ABOUT CENTERLINE.
- 9) RUN CUTTER OFF PART WHERE INDICATED. BLEND OUT EDGE LONGITUDINALLY,  
TRANSITION SHOULD BE SMOOTH.
- 10) BEND PROGRESSIVELY WITH A MINIMUM OF 10 PASSES. MAXIMUM TUBE FLATTENING DUE  
TO BENDING IS 6% BASED ON O.D.
- 11) LIQUID PENETRANT INSPECT OUTSIDE SURFACE OF CROSSTUBE PER QSI 038.
- 12) INSTALL D2892-1 SUPPORT USING 0.03" TO 0.06" THICK LAYER OF MAGNOBOND 6398 PER QSI  
015. LET CURE FOR 12 HOURS AFTER INSTALLATION AND PRIOR TO PACKAGING.
- 13) INSTALL MS21920-22 CLAMPS WITH D3595-063-450 RUBBER CUSHIONS TO SECURE THE  
D2892-1 SUPPORT ON TOP SIDE OF THE CROSSTUBE. ENSURE CLAMP MECHANISMS ARE  
LOCATED ON CROSSTUBE SUPPORTS.
- 14) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE  
OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS  
SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT  
LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE.
- 15) TORQUE CLAMPS 80 TO 100 IN-LB. ENSURE AT LEAST 1.5 THREADS ARE SHOWING IN  
SAFETY AND THAT NUT HAS NOT BOTTOMED-OUT AFTER TORQUING.

SHOP COPY  
RETURN TO  
ENGINEERING  
UNCONTROLLED COPY  
SUBJECT TO AMENDMENT  
WITHOUT NOTICE  
WORK ORDER  
NO. 69983

2011-05-25

RELEASED  
2011-05-25

A	NEW ISSUE	DESCRIPTION	CP	10.12.23
REV.			BY	DATE
DESIGN				
DRAWN				
CHECKED				
MFG. APPR.				
APPROVED				
DE APPR.				
DATE	10.12.23			

**DART AEROSPACE LTD**  
HAWKESBURY, ONTARIO, CANADA

DRAWING NO. D206-667-247  
REV. A  
SHEET 1 OF 4

TITLE  
CROSSTUBE ASS'Y (206L MID AFT)  
SCALE  
NTS

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W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

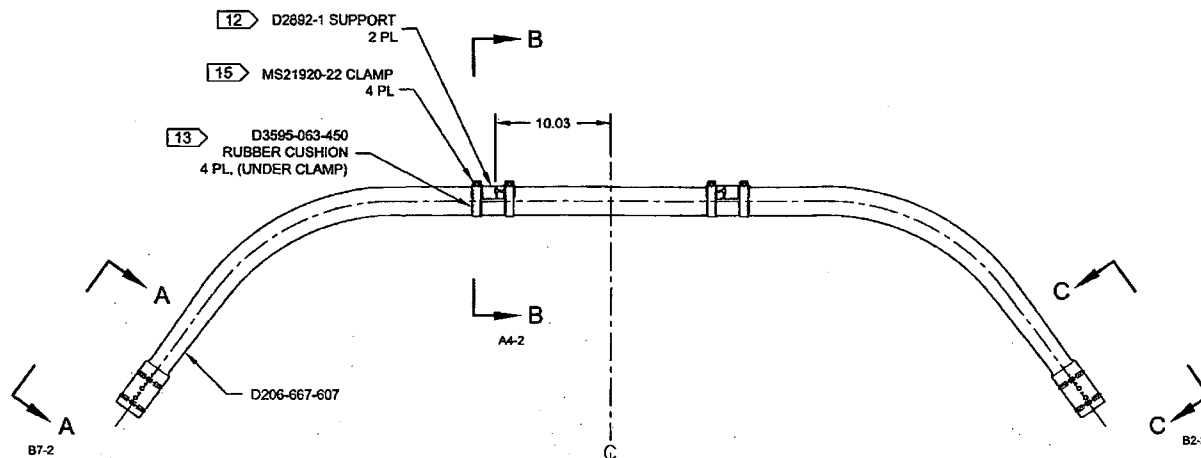
Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

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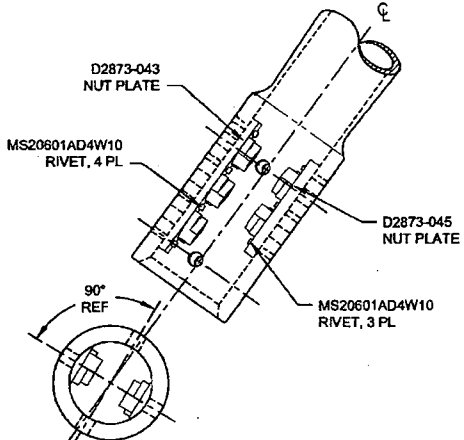
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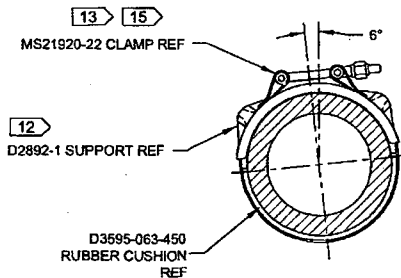
**D206-667-247**  
**ASSEMBLY DETAIL**  
(VIEW LOOKING FWD)

6983

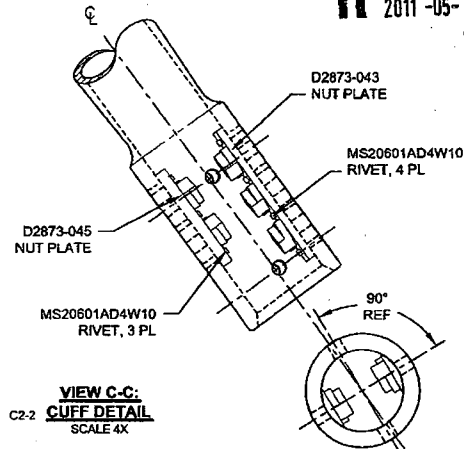
**RELEASED**  
2011-05-24



**VIEW A-A:**  
**CUFF DETAIL**  
SCALE 4X



**SECTION B-B**  
SCALE 5X



**VIEW C-C:**  
**CUFF DETAIL**  
SCALE 4X

DESIGN	97	<b>DART AEROSPACE LTD</b>	
DRAWN	97	HAWKESBURY, ONTARIO, CANADA	
CHECKED	97	DRAWING NO.	REV. A
MFG. APPR.	97	D206-667-247	SHEET 2 OF 4
APPROVED	97	TITLE	SCALE
DE APPR.	97	CROSSTUBE ASS'Y (206L MID AFT)	NTS
DATE	10.12.23	<small>COPYRIGHT © 2010 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSES OR COPIED OR REPRODUCED IN ANY MANNER WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.</small>	

8 7 6 5 4 3 2 1

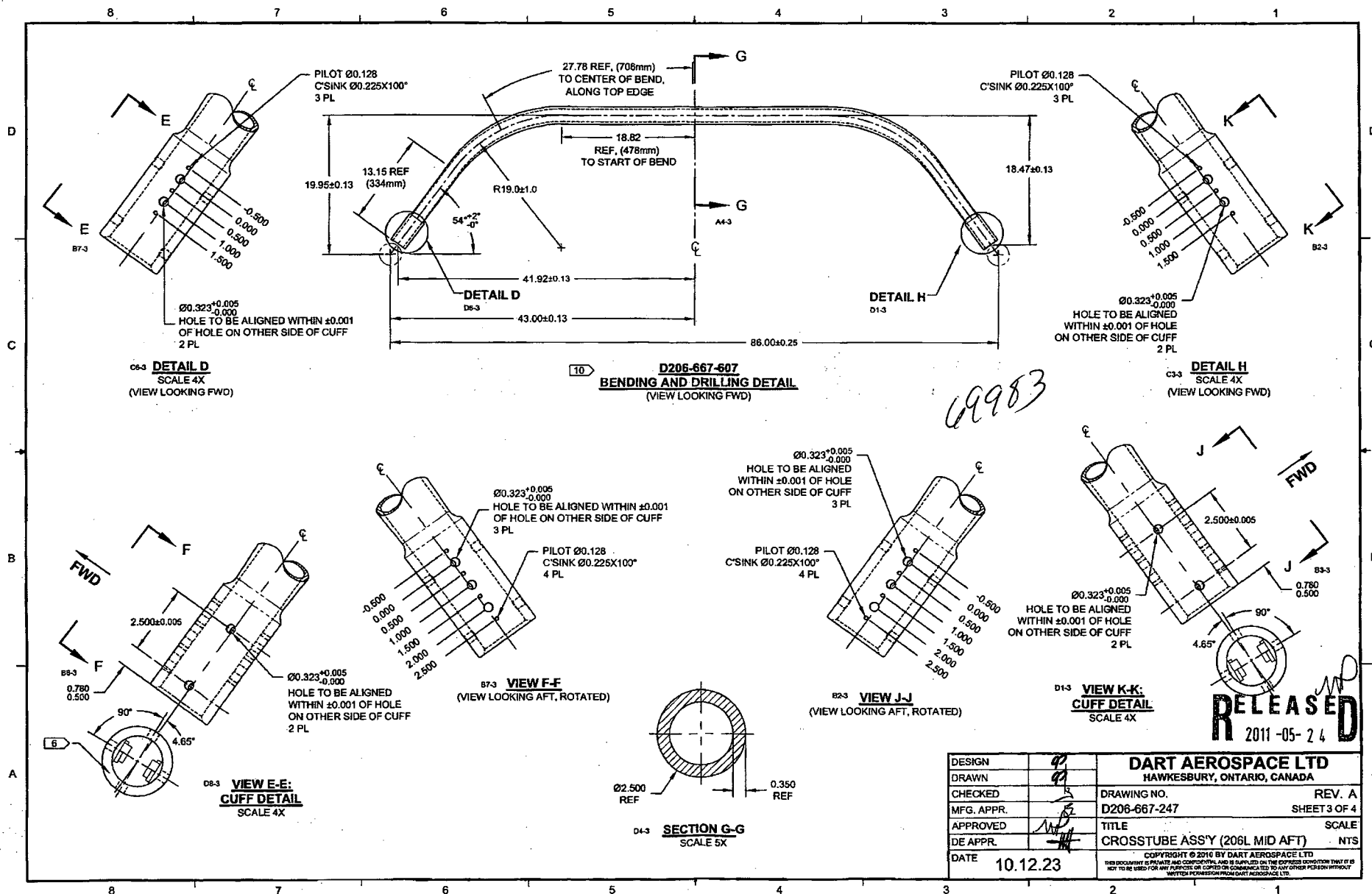
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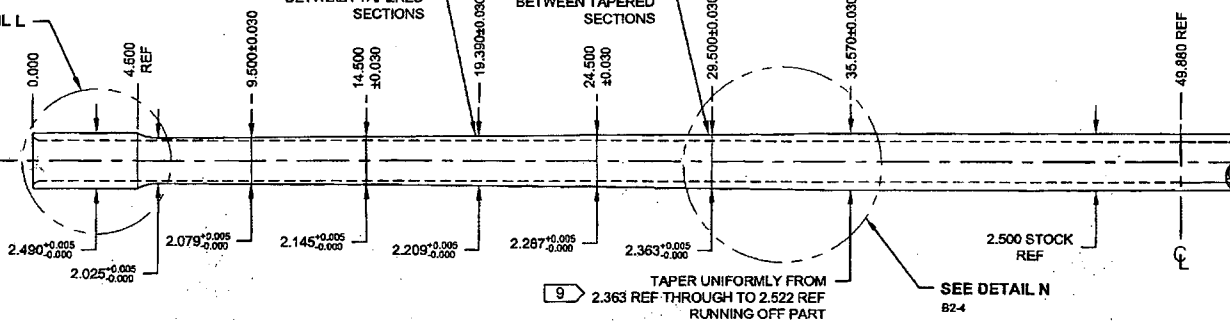


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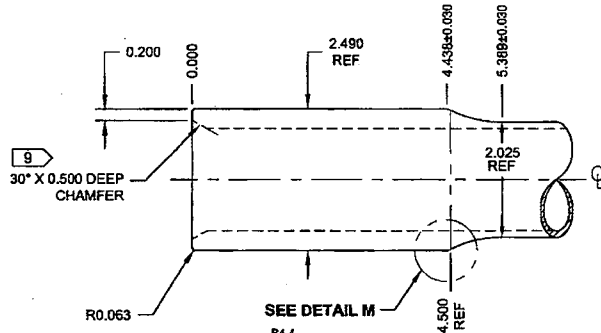
SEE DETAIL L  
B7-4

R100.0 TRANSITION  
BETWEEN TAPERED  
SECTIONS

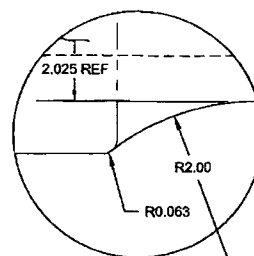
R100.0 TRANSITION  
BETWEEN TAPERED  
SECTIONS



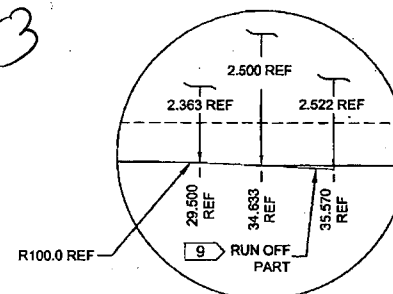
TURNING DETAIL



C7-4 **DETAIL L: CROSSTUBE CUFF**  
SCALE 2.5X



B6-4 **DETAIL M: CUFF TRANSITION**  
NOT TO SCALE



C4-4 **DETAIL N: TAPER RUN-OFF**  
NOT TO SCALE

**RELEASED**  
2011-05-24

DESIGN	9	<b>DART AEROSPACE LTD</b>	
DRAWN	9	HAWKESBURY, ONTARIO, CANADA	
CHECKED	9	DRAWING NO.	REV. A
MFG. APPR.	9	D206-667-247	SHEET 4 OF 4
APPROVED	9	TITLE	SCALE
DE APPR.	9	CROSSTUBE ASS'Y (206L MID AFT)	NTS
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